

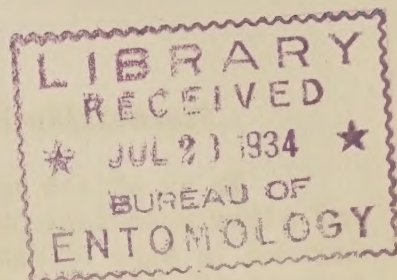
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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Chemistry and Soils
Insecticide Division

Patent List No. 1



A LIST OF

UNITED STATES PATENTS

Issued from 1917 to 1933 inclusive

relating to

INSECT ELECTROCUTORS

compiled by

R. C. Roark

Washington, D.C.
July 1934

A LIST OF UNITED STATES PATENTS ISSUED FROM 1917 TO 1933, INCLUSIVE,
RELATING TO INSECT ELECTROCUTORS.

Compiled by: *[Signature]*

R. C. Roark,

Insecticide Division, Bureau of Chemistry and Soils.

In an effort to avoid poisonous residues of lead, arsenic, fluorine and other materials on fruits and vegetables much attention is being devoted to ways of combating insects other than with insecticides. The Insecticide Division of the Bureau of Chemistry and Soils, United States Department of Agriculture, has, during the past ten years, collected all United States patents relating not only to insecticides but also to spraying, dusting and fumigating apparatus, insect traps and various mechanical and electrical devices for destroying insect pests. In the hope that information of value may be obtained from these non-chemical patents there has been prepared a series of compilations, each listing or abstracting patents on a specific kind of device. The present compilation deals with devices for electrically killing insects. The 17-year period 1917-1933 has been selected because the most recent patent literature contains the most valuable information and because the vast number (nearly 2,000,000) of patents issued since the establishment of the Patent Office makes it impossible to consider all patents even in such a restricted field as pest control. Since the life of a patent is 17 years this compilation includes all patents that were in force in December 1933.

It is manifestly impossible to adequately abstract a patent that deals with so complicated a mechanical or electrical apparatus that several sheets of drawings are required to explain it. Those persons interested in insect electrocuting devices are urged, therefore, to secure copies of the patents from the United States Patent Office, Washington, D. C., at 10 cents each (stamps not accepted).

Of the 56 patents listed here it is of interest to note that 7 rely on artificial light (e.g. electric light) for luring insects, 5 rely on bait only and 10 use either light or bait. In no case is the nature of the bait specified. Seven patents relate to electrically charged door or window screens and there are also patents on devices for electrocuting ants, roaches and cotton boll weevils.

Every effort has been made by the compiler to make this list of patents complete and no discrimination is intended against any patent mention of which is inadvertently omitted.

The Department of Agriculture assumes no responsibility for the merits or workableness of any of the patents; nor does it recommend any of the inventions mentioned.

1,239,501 (Sept. 11, 1917; appl. Dec. 4, 1915). INSECT-KILLER. Irving W. Mason, Aberdeen, Washington. - This insect electrocuting device consists of a copper plate and a perforated brass plate which are separated by a perforated insulating strip. The shape of the device conforms to the curvature of the article upon which it is to be used. It may be attached to various objects such as a light shade or a dish cover.

1,247,488 (Nov. 20, 1917; appl. Mar. 11, 1916). ELECTRIC FLY-TRAP. William A. Bass, Rio Vista, Texas. Insects are attracted to this device by an electric lamp or by bait and are electrocuted as they enter. This trap is an improvement over the one described in U. S. Patent 1,159,157 issued Nov. 2, 1915 to W. A. Bass.

1,295,207. (Feb. 25, 1919; appl. Mar. 9, 1917). INSECT-TRAP. John G. Reed, Pasadena, Calif. - One-third to John L. Robbins, Oxnard, Calif. - Flies and other insects attracted to this trap by bait are electrocuted when they engage certain portions of the trap.

1,325,475 (Dec. 16, 1919; appl. Jan. 9, 1919). GRASSHOPPER-HARVESTER. Walter D. Kemp, New York, N.Y. - Grasshoppers and other insects are scared by this machine as it moves over a field and are electrocuted when they jump against an electrically charged screen. The freshly killed insects are utilized subsequently as poultry food.

1,326,320 (Dec. 30, 1919; appl. Dec. 9, 1916). INSECT-EXTERMINATOR. John B. Black, Kuttawa, Ky. - This device electrocutes flies and other insects attempting to enter a building through a window or door.

1,352,699 (Sept. 14, 1920; appl. Apr. 30, 1918; Renewed Oct. 21, 1919). PROCESS OF DESTROYING INSECT LIFE. Franklin S. Smith, Philadelphia, Pa. - Insects including their eggs, larvae and pupae in grains, dried fruits and woolens are killed by electrical disruptive conduction. The material, which may be in cartons, is treated while on a traveling belt.

1,360,654 (Nov. 30, 1920; appl. Oct. 24, 1916). APPARATUS FOR ELECTRICALLY CHARGING FLUIDS). Edgar E. Littlefield, Seattle, Wash. - This apparatus electrically charges a liquid so that when sprayed upon vegetation the electrical charge will be carried to and deposited upon the objects upon which the liquid falls. The electrical charge frees the vegetation of fungus or insect pests and also intensifies the action of an insecticide or fungicide which may be added to the spray.

1,399,161 (Dec. 6, 1921; appl. Mar. 27, 1919). APPARATUS FOR TREATING ARTICLES BY DISRUPTIVE CONDUCTION. Franklin S. Smith, Philadelphia, Pa. - Grain, dried fruits, woolens, etc., are treated on a moving belt by an electric current passed between electrodes.

1,399,162 (Dec. 6, 1921; appl. Sept. 4, 1920). APPARATUS FOR TREATING PRODUCTS BY DISRUPTIVE CONDUCTION. Franklin S. Smith, Philadelphia, Pa. - Insect life in grain, dried fruits, drugs, books, leather, furs, etc., is destroyed by placing the material on a traveling belt and exposing it to an electric current passed between electrodes.

1,412,497 (Apr. 11, 1922; appl. June 6, 1921). ELECTRIC FLY KILLER. John H. Turpin, Bromerton, Washington. - Flies are attracted to this device by means of bait, are electrocuted as they pass from one plate to the other across the opening, and fall into a trough.

Re. 15,351 (Orig. 1,399,161, Dec. 6, 1921; appl. Mar. 27, 1919; May 9, 1922; appl. Apr. 6, 1922.) APPARATUS FOR TREATING ARTICLES BY DISRUPTIVE CONDUCTION. Franklin S. Smith, Philadelphia, Pa. - Grain, dried fruits, woollens, etc., are treated on a moving belt by an electric current passed between electrodes.

1,422,287 (July 11, 1922; appl. Aug. 27, 1921) FLY EXTERMINATOR. Edward J. Marchand, Duluth, Minn. -- This device consists of a shallow open receptacle in the bottom of which a mirror is placed, which is designate to ~~make~~ the interior of the receptacle appear light for attracting flies. In attempting to enter the receptacle the flies come in contact with electrically charged copper wires and are electrocuted. In practice it has been found that since flies flock together the greatest difficulty is to catch or kill the first fly so that its presence will lure others, and therefore, it may be advantageous to ~~print~~ a few flies on the face of the mirror, or even better place a few decoy flies in the receptacle as an attraction.

1,429,691 (Sept. 19, 1922; appl. Oct. 8, 1920). ELECTRICAL FLY-KILLING DEVICE. Carmelo Pandolfo, Montevideo, Uruguay. - This device for electrocuting flies is provided with a transformer by which the house current may be stepped down to accommodate the present apparatus.

1,441,606 (Jan. 9, 1923; appl. Jan. 14, 1922). APPARATUS FOR AND METHOD OF PROTECTING ARTICLES FROM CREEPING INSECTS. Franklin S. Smith, Philadelphia, Pa. - The Products Protection Corporation, New York, N.Y. -- Candy, food and other articles are protected from creeping insects such as ants by interposing an electrostatic field in the path which must be traveled by said insects in order to reach the articles. A suitable apparatus is described. An alternating current of about 4,000 volts produces the desired results.

1,471,423 (Oct. 23, 1923; appl. Feb. 12, 1919). ART OF TREATING GRAIN IN BULK BY ELECTRICITY. Franklin S. Smith, Philadelphia, Pa. - Products Protection Corp., New York, N.Y. - In this process an electric current is passed along the surfaces of the grain particles and then through the particles to destroy insect life.

1,473,535 (Nov. 6, 1923; appl. Feb. 13, 1922). INSECT EXTERMINATOR. Hugh Alexander, Cleveland, Ohio. - This device can be suspended from an ordinary incandescent lamp socket. Flies are attracted by a piece of banana, milk or other suitable bait, and are electrocuted or stunned and fall into a solution of lysol.

1,480,573 (Jan. 15, 1924; appl. Mar. 27, 1919). APPARATUS FOR TREATING GRAINS, BEANS, ETC., BY DISRUPTIVE CONDUCTION. Franklin S. Smith, Philadelphia, Pa. - Products Protection Corp., New York, N.Y. - Insect life in milled cereals, dried fruits, drugs, books, leather, etc., is destroyed by disruptive conduction.

1,486,307 (Mar. 11, 1924; appl. Mar. 1, 1923). FLYTRAP. Charles G. See-fluth and John Bebiolka, Pontiac, Mich. - Charles G. See-fluth. - This insect trap attracts flies and other insects by an electric light and electrocutes them.

1,489,798 (Apr. 8, 1924; appl. Mar. 21, 1921. Renewed Sept. 26, 1923). PROTECTING PILING FROM TEREDOS AND THE LIKE. Charles P. Tatro and George Delius, Seattle, Wash. - Wooden piling in salt water is protected against the teredos by placing an anode in the water adjacent the pile and a cathode in the water at a distant point and passing a direct current through these terminals. The borers are destroyed by chlorine. This process is an improvement over the one described in U. S. Patent 948,355 issued to the patentees.

1,494,213 (May 13, 1924) appl. Mar. 15, 1923). ELECTRICAL INSECT TRAP. Harry E. Bronson, Mineral, Wash. - This trap attracts winged insects of all kinds by an electric light or by suitable bait and electrocutes them.

1,539,360 (May 26, 1925; appl. June 9, 1924). INSECT DESTROYER. Carl Knutson, Charleston, S. C. - Flies and other insects are attracted by bait or an electric light to this device and are electrocuted.

1,549,161 (Aug. 11, 1925; appl. Mar. 28, 1922). INSECT TRAP. Birt E. Sutton, Blue Rapids, Kans. - Flies and other insects are attracted by bait or by an electric light to this lighting fixture suspended from the ceiling and are electrocuted.

1,550,407 (Aug. 18, 1925; appl. Feb. 4, 1922). INSECT EXTERMINATOR. Walter R. Wilson, Oakland Calif. - One-half to Henry B. Bayliss, Oakland, Calif. - Ants crawling into this metal receptacle are electrocuted.

1,567,905 (Dec. 29, 1925; appl. June 14, 1923). INSECT CATCHER. Julio Bovet, Venanzio L. Demoz and Arturo L. Demoz, Buenos Aires, Arg. - Insects are attracted by bait or by an electric light to this device and electrocuted.

1,590,439 (June 29, 1926; appl. Feb. 25, 1924). FLYTRAP. Charles E. Lebrecht, Oakland, Calif. - Insects attracted to this device by an electric light are electrocuted.

1,611,652 (Dec. 21, 1926; appl. Oct. 7, 1925). ELECTRIC INSECT DESTROYER. Henry H. Leedom, Anderson, Ind. - A device for electrocuting flies and mosquitoes is described.

1,622,922 (Mar. 29, 1927; appl. Dec. 8, 1923). INSECT DESTROYER. John A. Peterson and Frederick A. Treffer, Morrill, Kans. - This device electrocuted insects and rodents.

1,624,240 (Apr. 12, 1927; appl. May 22, 1925). INSECT DESTROYER. William W. Harwood, Grannis, Ark., and George Harwood, Dickinson, Texas. - As this apparatus is driven through a cotton field boll weevils are knocked from the plants and fall onto wire mesh endless belts where they are electrocuted.

1,648,723 (Nov. 8, 1927; appl. Aug. 5, 1925). ELECTRICAL INSECT DESTROYER. Victor D. Coglon, Calgary, Alberta, Canada. - Flies are electrocuted in attempting to pass through this door screen.

1,651,999 (Dec. 6, 1927; appl. Feb. 12, 1927). ELECTRICAL INSECT DESTROYER. Victor D. Coglon, Calgary, Alberta, Canada. - Flies are electrocuted attempting to pass through this screen.

1,664,027 (Mar. 27, 1928; appl. Jan. 6, 1923; in Austria, Aug. 4, 1924). ELECTRIC FLYTRAP. Dominik Fillier, Vienna, Austria. - Flies are attracted to this device by food and mosquitoes and other night flying insects by an electric light and are electrocuted.

1,666,723 (April 17, 1928; appl. July 6, 1926). ELECTRICAL ROACH TRAP. Stecy D. Trumbo, Columbus, Ohio. - Roaches attempting to reach bait in this trap are stunned by an electrical shock and fall into a trapping receptacle. The device may be connected with the usual home wiring circuit

1,691,226 (Nov. 13, 1928; appl. Feb. 25, 1927; Renewed Sept. 15 1928). INSECT SCREEN. Harry H. Cragg, Calgary, Alberta Canada. - Insects alighting on alternate wires of this device simultaneously are electrocuted.

1,730,608 (Oct. 8, 1929; ^{appl.} Oct. 18, 1927). INSECT TRAP. William M. Frost, Spokane, Wash. - Flies crawling over this screen come in contact with a metallic strip and are electrocuted.

1,730,814 (Oct. 8, 1929; appl. Mar. 23, 1927). INSECT ELECTROCUTOR. William M. Frost, Spokane, Wash. - Insects are attracted by an electric light to this electrocuting screen.

1,737,866 (Dec. 3, 1929; appl. Oct. 10, 1923). METHOD OF AND APPARATUS FOR THE PRACTICE OF AGRICULTURE. Hamilton L. Roe, Pittsburgh, Pa. - Insects, their eggs and larvae and weeds are killed by passing high frequency electrical currents through the top layer of soil. This may be done with a multiple disk harrow connected with a battery.

1,743,664 (Jan. 14, 1930; appl. Nov. 15, 1927). INSECT TRAP. William M. Frost, Spokane, Wash. - Insects attracted to this device by an electric light or a bait are electrocuted.

1,743,665 (Jan. 14, 1930; appl. Dec. 12, 1927). INSECT TRAP. William M. Frost, Spokane, Wash. - Insects are attracted by an electric light or a bait to this device and electrocuted.

1,754,748 (Apr. 15, 1930; appl. July 9, 1926). ELECTRIC INSECT DESTROYER. Anson J. Frost, Spokane, Washington. - An electrically charged door screen electrocutes flies seeking to pass through it.

1,823,892 (Sept. 22, 1931; appl. Jan. 27, 1930). INSECT TRAP. George R. Galbraith, Brewster, Wash. - Insects in fruit orchards are attracted by odorous liquid bait to this trap where they are electrocuted.

Re. 18,294 (Dec. 22, 1931; appl. Nov. 24, 1930, Orig. No. 1,743,664; Jan. 14, 1930; appl. Nov. 15, 1929). INSECT TRAP. William M. Frost, Spokane, Wash. - Frost Electric Screen Co., Spokane, Wash. - Insects are attracted by an electric light or by bait to this insect electrocutor.

Re. 18,313 (Jan. 5, 1932; appl. Nov. 24, 1930, Orig. No. 1,743,665, Jan. 14, 1930; appl. Dec. 12, 1927). INSECT TRAP. William M. Frost, Spokane, Wash. - Frost Electric Screen Co., Spokane, Wash. - This electric insect trap comprises cage-like electrodes, one within the other, each of said electrodes including spaced radial blades, the blades of the respective electrodes being arranged in

staggered relation. Insects may be attracted to this device by an electric lamp or by bait.

1,839,247 (Jan. 5, 1932; appl. Feb. 1, 1928). INSECT DESTROYER. Edward P. Moore, Berkeley, Calif. - Insects are attracted to this device by a light, by a poison lure or by oil treated so as to have an odor attractive to insects. They receive an electric charge from metallic needles and fall into a trough containing a film of oil and water.

1,848,614 (Mar. 8, 1932; appl. July 2, 1931). ELECTRICAL INSECT EXTERMINATOR. William F. Folmer and Harrison L. Chapin, Rochester, N.Y. - Folmer-Chapin Corp., Rochester, N.Y. - Insects are lured to this device by an electric light or by molasses, cut fruit, meat or other foods and are electrocuted by a voltage of about 3500. This device is particularly useful in protecting fruit trees against night-flying insects.

1,848,625 (Mar. 8, 1932; appl. Feb. 25, 1931). ELECTRICAL SCREEN DOOR. Charles D. Hager, Crown Point, N. M. - This insect-electrocuting screen is electrified intermittently.

1,852,923 (April 5, 1932; appl. Sept. 23, 1931). ELECTRIC INSECT EXTERMINATOR. William F. Folmer and Harrison L. Chapin, Rochester, N. Y. - Folmer-Chapin Corporation, Rochester, N.Y. - Houseflies, moths, and other insects are attracted to this insect electrocutor by an electric lamp or by bait.

1,858,923 (May 17, 1932; appl. Nov. 1, 1928). INSECT ELECTROCUTOR. William M. Frost, Spokane, Wash. - Insects are attracted to this electrocuting device by an electric light.

1,871,978 (Aug. 16, 1932; appl. Jan. 14, 1928). INSECT ELECTROCUTOR. William M. Frost, Spokane, Wash. - This insect electrocutor may be used as a door or window screen or insects may be attracted to it by an electric light. This device is an improvement over the one described in United States Patent 974,785 issued November 8, 1910 to W. M. Frost.

1,879,495 (Sept. 27, 1932; appl. Nov. 17, 1930). INSECT ELECTROCUTOR. Ross L. Renwick, Niles, Mich. - This insect electrocutor is adapted for use wherever door or window screens are used.

1,882,550 (Oct. 11, 1932; appl. Jan. 13, 1928). INSECT ELECTROCUTOR. William M. Frost, Spokane, Wash. - This insect electrocuting screen for use in windows and doors is an improvement over the one described in U. S. Patent 974,785 issued to W. M. Frost on November 8, 1910.

1,890,116 (Dec. 6, 1932; appl. Nov. 18, 1931). INSECT DESTROYING DEVICE. Charles L. Jackson, Chula Vista, Calif. - Insects are lured to this device by an aromatic solution and are killed either by insect powder or by an electric charge.

1,895,570 (Jan. 31, 1933; appl. Nov. 18, 1930). ELECTRIC INSECT DESTROYER. William M. Frost, Spokane, Washington. - This electrocuting screen for doors and windows is an improvement over the one described in United States

Patent 974,785 issued November 8, 1910 to W. M. Frost.

1,897,263 (Feb. 14, 1933; appl. Jan. 8, 1931). INSECT DESTROYER.
Olaf Kyllö, Kettle Falls, Wash. - An electric light attracts orchard pests, corn borer and other insects to this device where they are electrocuted.

1,910,623 (May 23, 1933; appl. Dec. 21, 1931). INSECT DESTROYER.
Leigh B. McWilliams and Eyle V. McWilliams, Whittier, Calif. - This electrocuting device may be in the form of a window screen or a cage suspended from a fruit tree.

1,932,237 (Oct. 24, 1933; appl. Sept. 5, 1931). DEVICE FOR USE IN CATCHING EARTH WORMS, INSECTS, AND THE LIKE. Roe P. Warner, Kalamazoo, Mich. - Ants, grubs and earthworms are driven to the surface of the ground or destroyed by inserting a metallic rod in the ground and passing an electric current.

1,936,468 (Nov. 21, 1933; app. Feb. 4, 1931). INSECT EXTERMINATOR.
William F. Folmer and Harrison L. Chapin, Rochester, N. Y., Folmer-Chapin Corp., Rochester N.Y. - Night-flying insects are attracted by an electric light to this device and electrocuted.

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